

Climate Change Corner

Climate change from an Earth sciences perspective

Some points relevant to the climate change debate are summarised below:

- (1) Climate has changed throughout Earth's history.
- (2) The present level of about 388 parts per million level of carbon dioxide in the atmosphere has already exceeded the maximum level of the past 800,000 years. This value is obtained from air bubbles trapped within the ice in Antarctica. The consequence of further increases remains uncertain.
- (3) Earth scientists do not have an overwhelming consensus on whether carbon trading alone is an effective measure in mitigating climate change.
- (4) The present state of the Earth's demise is largely the result of human actions including population growth and the mismanagement of the Earth.
- (5) The latest evidence on sea-level changes is not in support of a 'rapid' rate of future sea-level rise through global warming.
- (6) Volcanic eruptions have played an important role in driving the Earth's climate. Examples of local impact include the driest year in Hong Kong's history in 1963 and the second wettest year in Hong Kong's history in 1982.
- (7) Human action has drastically modified the 'natural' water cycle. Unfortunately this is not well recognised as a major cause of climate change when compared to the emission of greenhouse gases through human action.
- (8) The rise in mean annual temperature of about 1 deg C found at the Hong Kong Observatory Station since record began is best explained by the thermal heat island effect.
- (9) No evidence has been found for an increase in frequency of typhoons in the northwestern Pacific.

In spite of the uncertainties, action on many fronts will be needed to make our future on Earth more sustainable. It is essential to curb population growth and change our lifestyles as well as improve the management of planet Earth. Remember: act local, think global.

References

Website <http://www.yearofplanetearth.org>.

Yim, W W S and Ollier, C D. "Managing planet Earth to make future development more sustainable: climate change and Hong Kong". Environmental Division Annual Seminar, HKIE, 2008, pp 123-135.

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